

What is claimed is:

1. A non-refillable valve adapted for use with a pressure container, said valve comprising:

a valve body having an inner surface defining a longitudinally extending chamber extending therethrough, said chamber having a lower portion communicating with the pressure container to allow selective filling and discharge of said container, said chamber including a valve seat positioned in said lower portion of said chamber, said inner surface having a concentrically oriented protrusion extending from said inner surface into said chamber, and a transverse opening formed in said valve body and communicating with said valve chamber;

10 a valve stem disposed in said chamber and being movable in said chamber, said valve stem including a valve core communicating with said valve stem, said valve core being independently movable in said chamber relative to said valve stem, said valve core including a flange; and

15 at least one O-ring abutting said inner surface of said valve body for sealing said valve stem with respect to said valve body;

wherein said valve operates to allow fluid to flow through said opening and chamber to fill the container when said valve stem is in a first position, the fluid moveable both above and below said flange of said valve core when said valve stem is in said first position.

2. A non-refillable valve, as claimed in Claim 1, wherein said valve operates to seal the container to prevent filling and discharge of the container when said valve stem is placed in a second position, the second position achieved by extending an end of said valve stem below said protrusion and forcing said valve core beyond said protrusion and into contact with said valve seat.

5 3. A non-refillable valve, as claimed in Claim 1, wherein:

said valve stem has a bore formed therein, and said valve core is slidably received in said bore and movable in said bore as influenced by the positioning of said valve stem and by pressure of a fluid entering or exiting said valve.

4. A non-refillable valve, as claimed in Claim 1, wherein:
said valve further includes a handle integral with said valve stem for operating said
valve stem.

5. A non-refillable valve, as claimed in Claim 1, wherein:
said valve stem is positionable in a third position to allow flow of fluid out of said
pressure container and back through said chamber and said transverse opening; however, said
third position preventing flow of fluid through said transverse opening and said chamber into
the pressure container, thus preventing the refilling of the container.

6. A non-refillable valve, as claimed in Claim 5, wherein:
said third position is defined by said valve stem being raised to a level allowing said
valve core to slide upward in response to fluid pressure from the container, or slide
downward in response to pressure from fluid entering the chamber, said downward
movement of said valve core causing said valve core to seal itself with respect to said valve
seat.

7. A non-refillable valve adapted for use with a pressure container, said valve comprising:

a valve body having an inner surface defining a longitudinally extending chamber extending therethrough, said chamber having a lower portion communicating with the pressure container to allow selective filling and discharge of said container, said chamber including a valve seat positioned in said lower portion of said chamber, said inner surface having a concentrically oriented protrusion extending from said inner surface into said chamber, and a transverse opening formed in said valve body and communicating with said valve chamber, said transverse opening intersecting said protrusion;

10 a valve stem disposed in said chamber and being movable in said chamber, said valve stem including a valve core communicating with said valve stem, said valve core being independently movable in said chamber relative to said valve stem; and

15 wherein said valve operates to allow fluid to flow through said opening and chamber to fill the container when said valve stem is in a first position, and further wherein said valve operates to seal the container to prevent filling and discharge of the container when said valve stem is placed in a second position forcing said valve core beyond said protrusion and into contact with said valve seat.

8. A non-refillable valve, as claimed in Claim 7, wherein:

said valve core further includes a sealing member attached thereto which contacts said valve seat in the second position.

9. A non-refillable valve, as claimed in Claim 7, wherein:

said valve stem has a bore formed therein, and said valve core is slidably received in said bore and movable in said bore as influenced by the positioning of said valve stem and by pressure of a fluid entering or exiting said valve.

10. A non-refillable valve, as claimed in Claim 7, wherein:

said valve stem is positionable in a third position to allow flow of fluid out of said pressure container and back through said chamber and said transverse opening; however, said

third position preventing flow of fluid through said transverse opening and said chamber into
5 the pressure container, thus preventing the refilling of the container.

11. A non-refillable valve, as claimed in Claim 10, wherein:
said third position is defined by said valve stem being raised to a level allowing said
valve core to slide upward in response to fluid pressure from the container, or slide
downward in response to pressure from fluid entering the chamber, said downward
5 movement of said valve core causing said valve core to seal itself with respect to said valve
seat.

12. A non-refillable valve adapted for use with a pressure container, said valve comprising:

a valve body having an inner surface defining a chamber extending therethrough, said chamber communicating with the pressure container to allow selective filling and discharge of the container, said inner surface having means extending into said chamber for creating a constriction in said chamber, said chamber further including a lower portion communicating with a transverse passageway formed in said valve body;

means mounted in said chamber for controlling flow of fluid through said valve, said means for controlling including a flange;

means for positioning said means for controlling, said means for positioning mounted in said chamber and placed in contact with said means for controlling; and wherein said means for positioning enables said means for controlling to move from a first position to a second position, said first position enabling fluid flow through said valve to fill the pressure container, said second position preventing fluid flow to and from the pressure container, wherein the fluid is moveable both above and below said flange of said means for controlling when said means for positioning is in said first position; and

means for sealing between said inner surface of said valve body and said means for positioning.

13. A non-refillable valve, as claimed in Claim 12, wherein:

said means for controlling is slidably received in said means for positioning.

14. A non-refillable valve, as claimed in Claim 12, wherein:

said means for positioning includes a valve stem mounted within said chamber, and a handle attached to said valve stem.

15. A non-refillable valve, as claimed in Claim 12, wherein said means for positioning enables said means for controlling to be positioned in a third position to allow flow of fluid from the pressure container and back through said valve, yet prevents fluid flow through said valve and into the pressure container, said means for controlling being

5 independently movable with respect to said means for positioning while said means for controlling is in said third position.

16. A non-refillable valve, as claimed in Claim 12, wherein said means for sealing comprises at least one o-ring.

17. A method of controlling flow to and from a pressure container, said method comprising the steps of:

attaching a valve to the pressure container, the valve communicating with an opening of the pressure container, the valve including a valve body defining a chamber therein, a
5 valve stem inserted within the valve body, the valve stem including a slidable valve core inserted within a bore of the valve stem, a protrusion extending from an inner sidewall of the valve body into the chamber, the protrusion intersecting a transverse passageway that opens into the chamber, and a valve seat located at a lower end of the valve in the chamber;

setting the valve to a first position wherein the valve core is positioned in the
10 chamber above the protrusion;

providing a first flow of fluid through the valve and into the container for filling the container with a desired fluid;

operating the valve to move the valve core downwardly beyond the protrusion and in seating engagement with the valve seat of the valve, thus sealing the pressure container;

15 operating the valve to a third open position allowing fluid to evacuate from the container back through the valve.

18. The method as claimed in claim 17, wherein the valve core includes a flange having a substantially flat upper edge and a sealing member attached to a distal end of the valve core.

19. The method as claimed in claim 17, wherein said distal end of the valve core intersects or is positioned above the transverse passageway during filling.

20. The method as claimed in claim 17, further comprising the step of providing a second flow of fluid into the valve, thereby causing said valve core to slide downwardly with respect to the valve stem causing the valve core to return to its seated position against the valve seat, thereby preventing flow of the second fluid into the pressure container.